CLAIMS

1. Hearing aid with a microphone system for providing a directional response by generating a fixed forward pointing directivity pattern and a fixed backward pointing directivity pattern and where the forward and backward directivity pattern signals are mixed at a ratio, which ensures energy minimization of the output signal, and where the fixed directivity patterns are set for optimized directivity when the microphone system is located near or at an object.

2. Hearing aid as claimed in claim 1 wherein the object is the hearing aid users head.

3. Hearing aid as claimed in claim 1 or 2, wherein the fixed directivity patterns are set to ensure the highest possible ratio between sound coming from directly in front of the hearing aid user and unwanted sound from behind the user.

4. Hearing aid as claimed in one or more of the above claims, wherein the optimal forward and backward pointing directivity patterns are generated in a number of frequency bands.

5. Method for adjusting the directional response of a microphone system which is to function at or near an object whereby the microphone system is placed near or at the object or a model of the object, a preferred direction is chosen whereafter the following steps are performed: a. subjecting the microphone system to sound inputs from various directions, b. adjusting the response from the microphone system in order to achieve the highest possible ratio between sound coming from the preferred direction of the microphone system and unwanted sounds coming from other directions, c repeating a and b for a number of different frequencies.

6. Method as claimed in claim 5, whereby the microphone system has two omnidirectional microphones and where the directional response is achieved by adjusting a delay between the microphone signals and subtracting or adding the signals.

7. Method as claimed in claim 5 whereby the microphone system has two omnidirectional microphones and where the directional response is achieved by passing the microphone signals through analog to digital conversion and subsequent FIR or IIR filters before subtracting or adding the signals.